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| EXAMINER | |
|---|---|
| KESACK, DANIEL | |

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| 3691 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/736,070 | CRANE, GEORGE C. | |
| | Examiner | Art Unit | |
| | Daniel Kesack | 3691 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *01 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-14,17-30,33-43,46-49,52,53,56,57 and 60-73* is/are pending in the application.

4a) Of the above claim(s) *60-73* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,17-30,33-43,46-49,52,53,56 and 57* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. This office action is in response to Applicant's response filed May 1, 2008. The amendments have been entered and Applicant's arguments have been fully considered. Claims 1-14, 17-30, 33-43, 46-49, 52, 53, 56, 57 and 60-73 are currently pending. Claims 60-73 are currently withdrawn from consideration. The rejections are as stated below.

### *Claim Objections*

2. Claims 1, 22, 35, 48, 52, and 56 are objected to because of the following informalities: The claim recites "data that represents price in a financial system" and then subsequently recites "said price data", and then merely "said data". Examiner believes they all refer to the same data, however terminology should be consistent throughout the claim. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 4, 5, 6, 8, 9, 18, 48, 52, and 52 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for comparing a range of data to a range of data expected based on a specific formula derived from the concept of Brownian motion, does not reasonably provide enablement for comparing the data to ranges expected based on any and all interpretations of Brownian motion. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. Applicant discloses only a single formula for generating an expected data range, which Applicant based on Brownian motion. Since Brownian motion does not specifically imply this and only this formula, Applicant's claim language is an attempt to cover all methods of predicting ranges of data which have some connection to Brownian motion. For example, the Pilipovic reference cited within this action includes a discussion of Brownian motion and price points. Pilipovic discloses that prices are typically considered as following Brownian motion, and that, according to Brownian motion, a percent change in price depends on a deterministic drift term, and a random term, which allows one to generate a future price distribution (column 2 lines 16-29). Accordingly, this is an application of Brownian motion to determine an expected range of prices using a technique not enabled by Applicant's specification.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 4-10, 17-20, 24-27, 34, 38-40, and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4, 6, 17,18, It is not clear how either “relationship” is quantified, nor how the “expected relationship” is determined. Examiner assumes that the "actual relationship" is computed, in some way, based on the actual (acquired) data, however, it is not clear where the expected relationship comes from.

Claims 4-6, 8, 9, 18, The claims each recite some form of a step of drawing a conclusion of how the system is varying. Claim 1, from which each claim ultimately depends, recites a method wherein a conclusion is drawn for how the system is varying, based on the steps of claim 1 alone. Claim 4 performs the steps of claim 1, plus additional steps, and uses the results of those additional steps to draw a conclusion about how the system is varying (which is further narrowed in claim 5). Likewise claims 6 and 18 each performs the steps of claim 1, plus additional steps, and uses the results of those additional steps to draw a conclusion about how the system is varying. Finally, claim 9 performs steps in addition to the steps of claim 8, and comes up with a third conclusion of how the system is varying, using the results of the additional steps of claim 9. It is not clear how multiple conclusions can be drawn on the same system, as the nested dependencies may result in claim 9 concluding that a system is varying in a trend, the system is congesting, and the system is varying erratically.

Claims 25-27, 34 are rejected for the same reason, as being dependant upon claim 28, which draws a conclusion about the system.

Claims 38-40, 47 are rejected for the same reason, as being dependant upon claim 35, which draws a conclusion about the system.

Claim 7, The claim depends from claim 6 which includes all the limitations of claim 4 and claim 1. In all the parent claims, there are multiple instances of “acquiring", “determining”, and “comparing”. It is not clear which steps are repeated according to claim 7.

Claim 10, The claim recites “deriving… a prediction of when said system will move from a current condition of congestion or trend to another condition of congestion or trend.” However, the claims from which claim 10 depends recite a situation where the it is concluded that the system is varying erratically. In the situation where the system is varying erratically, claim 10 fails to further limit claim 9.

Claims 19, 20, The claims depend from 1, 17, 18, and 1, 17, respectively. In all the parent claims, there are multiple instances of “acquiring", “determining”, and “comparing”. It is not clear which steps are repeated according to the claims.

Claim 24, It is unclear from the specification and the claim language, what apparatus or equivalents, Applicant intends to be "means for applying bootstrapping techniques".

***Claim Rejections - 35 USC § 101***

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-14, 17-30, 33, 34, 48, 49, 52, and 53 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-14, 17-21, 48, and 49 recite a process comprising the method steps of acquiring data, comparing data, and making a conclusion. Based on Supreme Court precedent, a proper process must be tied to another statutory class or transform underlying subject matter to a different state or thing *(In Re Bilski; Diamond v. Diehr*, 450 U.S. 175, 184 (1981 ); *Parker v. Flook,* 437 U.S. 584,588 n.9 (1978); *Gottschalk v. Benson,* 409 U.S. *63,* 70 (1972); *Cochrane v. Deener,* 94 U.S. 780,787-88 (1876)). Since neither of these requirements is met by the claim, the method is not considered a patent eligible process under 35 U.S.C. 101. To qualify as a statutory process, the claim should positively recite the other statutory class to which it is tied, for example by identifying the apparatus that accomplished the method steps or positively reciting the

subject matter that is being transformed, for example by identifying the material that is being changed to a different state. Since the steps can be accomplished without the use of another statutory class, it is considered a non-statutory process.

Claims 22-30, 33, 34, 52, 53, The claims recite a means for determining, a means for comparing, and a means for concluding. Given its broadest reasonable interpretation, in light of the specification, the means for could all be interpreted as elements of a software product, such as described in the specification (paragraph 46). Therefore, the invention could be considered software, per se, and is not considered a statutory subject matter.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claims 1-14, 17-2-30, 33-43, 46-49, 52, 53, 56, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art, in view of Pilipovic, U.S. Patent No. 6,456,982.

Claims 1-14, 17-21, 48, 49, According to Applicant's specification, the concept of Brownian motion provides a formula which describes the movement of a particle which is moving erratically or haphazardly. According to the description, a particle which takes time $\Delta t$ to move about a radius r, can be expected to take $4\Delta t$ to cover the radius 2r. Based on this description, one can determine if a particle is following Brownian motion by taking the movement of a particle ($r_1$) during a first time ($\Delta t$), taking a second movement of a particle ($r_2$) during a second time ($4\Delta t$), and seeing if $2*r_1 = r_2$, as prescribed by the disclosed Brownian motion formula. The exercise is a direct application of the formula. Of course, in the event $2*r_1 = r_2$, as prescribed, it would be obvious to conclude that the particle follows Brownian motion, and the movements are erratic or haphazard.

Therefore, Applicant's admitted prior art teaches beginning at a first initial moment, acquiring data during a first duration, and determining a first range of said data during said first duration; comparing said first range of data during the first initial range to data expected based on Brownian motion during said initial first duration; and when said first range of said data during said initial first duration equals said range of said data expected, based on Brownian motion, during said initial first duration, concluding that the system is varying erratically. Examiner notes that since the claim is directed towards a method, only one of the three "when said first range" scenarios would be possible when practicing the claimed method, and therefore the situations are mutually exclusive, and only one of the three need be accomplished in order to practice the claimed method.

Applicant fails to teach the data representing price in a financial system.

Pilipovic teaches financial price data is typically considered to follow Brownian motion (column 2, lines 16-29), and using simulations to predict future prices (column 2 lines 10-15). It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Applicant to include applying the known concepts of Brownian motion to financial prices, because Pilipovic teaches this very application.

Claims 22-30, 33-34, 52, 53, In addition to the teachings as detailed above, Pilipovic teaches an apparatus comprising a means for acquiring the data during

different time periods, means for comparing the data with calculated values, and means for concluding something about the system (column 7, lines 50-62, column 10 lines 35-59, and claim 41).

Claims 35-43, 46, 47, 56, 57, The claims are rejected for substantially the same reasons as claims 22-30, 33-34, 52, 53, above. Examiner further notes that since the claim language recites "a data feed for…" and, "a processor for…" Accordingly, any processor which is capable of performing the intended use recited by Applicant would be considered to read on the claimed invention. The way in which applicant uses the processor, as claimed, does not make the processor patentable. The processor must be claimed as being programmed to accomplish a specific function in order to impart the functionality as a feature of the processor.

***Response to Arguments***

12. Applicant's arguments, see arguments , filed May 1, 2008, with respect to 35 U.S.C. 101 have been fully considered and are persuasive. The rejection has been withdrawn.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Kesack whose telephone number is (571)272-5882. The examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Kalinowski can be reached on 571-272-6771. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Respectfully Submitted,

Daniel Kesack
March 27, 2009
/D. K./
Examiner, Art Unit 3691

/Hani M. Kazimi/
Primary Examiner, Art Unit 3691